

13.(not entered) In a method including the step of passing an electric current through an electrolyte from an inert anode to a cathode in an electrochemical cell the improvement comprising :

said electrolyte being an acidic electrolyte consisting essentially of D₂O and an acid serving as a source of hydrogen ions,

said cathode is of an electrode formed of a metal capable of taking up hydrogen ions into the physical structure of the metal, this metal being selected from the group consisting of palladium and titanium,

the temperature of the electrolyte which is between said electrodes, the acidity of the electrolyte, and the voltage and density of said current being related so that this temperature, this acidity, this voltage and density are all concurrently effective so that as said method is practiced a greater amount of heat is produced in said cell than would be produced in said cell if the D₂O in said electrolyte was replaced by the same quantity of "regular" water.

14.(not entered) The method set forth in claim 13 including:

the step of collecting gases given off by reactions involving the electrolyte during the practice of said method is carried out in an enclosed space above this electrolyte;

reacting the collected gases; and

returning the reaction products of the collected gases to said electrolyte.

15.(not entered) The method set forth in claim 14 wherein:

the collected gases are catalytic ally reacted above the electrolyte in said cell and are returned to said electrolyte by the action of gravity.

16.(not entered) The method set forth in claim 15 wherein
said acid is sulfuric acid.

17. (not entered) The method claimed in claim 16 wherein;
said electrolyte contains 15% by volume sulfuric acid having a specific gravity of
1.84.

18.(not entered) The method claimed in claim 13 wherein:
said metal is palladium.

19. (not entered) The method claims in claim 13 wherein:
said metal is titanium.

19.(not entered) The method set forth in claim 13 wherein
the step of collecting gases given off by reactions involving the electrolyte
during the practice of said method is carried out in an enclosed space above this
electrolyte;

reacting the collected gases; and

returning the reaction products of the collected gases to said electrolyte.

the collected gases are catalytic ally reacted above the electrolyte in said cell
and are returned to said electrolyte by the action of gravity.

said acid is sulfuric acid.

said electrolyte contains 15% by volume sulfuric acid having a specific gravity of
1.84.

20. (not entered, currently amended) A method of operating an electrochemical cell including an anode ~~during the operation of the cell~~ and a cathode electrically connected to the anode during the operation of the cell through an electrolyte in which:

said electrolyte consists essentially of a mixture of D₂O and an effective amount of an acid to serve as a source of hydrogen ions,

said cathode being formed of a metal which is capable of taking up these hydrogen ions into the physical structure of the metal during the operation of the cell which is selected from the group consisting of palladium and titanium,

the temperature and acidity of the electrolyte between the electrodes and the density and current between the electrodes being related so that said electrolyte is both heated and caused to become radioactive during the operation of said cell.
through an electrolyte in which:

said electrolyte consists essentially of a mixture of D₂O and an effective amount of an acid to serve as a source of hydrogen ions,

said cathode being formed of a metal which is capable of taking up these hydrogen ions into the physical structure of the metal during the operation of the cell which is selected from the group consisting of palladium and titanium,

the temperature and acidity of the electrolyte between the electrodes and the density and current between the electrodes being related so that said electrolyte is both heated and caused to become radioactive during the operation of said cell.